

### Patent Claims

1. Gas sensor module, comprising:  
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a primary sensor for the registering of a gas concentration;  
  
a digital data memory for storing sensor data or process data; and  
10 an interface for connecting to a superordinated unit for supplying energy to the gas sensor module and for data exchange between the gas sensor module and the superordinated unit, characterized in that the interface is a contactless interface.  
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2. Gas sensor module as claimed in claim 1, wherein the contactless interface is embodied as a contactless plug or as a socket for a complementary, contactless plug.
- 20 3. Gas sensor module as claimed in claim 1 or 2, wherein the contactless interface comprises an inductive interface.
4. Gas sensor module as claimed in one of the claims 1 to 3, further comprising: an analog-digital converter for generating a digital  
25 signal, which is a function of an analog signal of the primary sensor dependent on the gas concentration.
5. Gas sensor module as claimed in one of the claims 1 to 4, further comprising: a microprocessor which, on the one hand,  
30 controls the data exchange between the interface of the gas sensor

module and the superordinated system, and, on the other hand, controls reading from the digital data memory and writing to the digital data memory.

- 5     6.     Gas sensor as claimed in claim 5, wherein the analog-digital converter is integrated into the microprocessor.

7.     Gas sensor module as claimed in one of the claims 1 to 6, further comprising:  
10    a temperature sensor.

8.     Transmitter module for operating at least one gas sensor module as claimed in one of the preceding claims, comprising:  
15    a contactless interface for data exchange with the gas sensor module and for energy supply of the gas sensor module; and

a communications circuit for output of at least one of the signals dependent on the measured data.

- 20    9.     Transmitter module as claimed in claim 8, wherein the communications circuit is a circuit for generating a 4...20 mA signal, a HART-modem, or an interface for connecting to a data bus, for example a Fieldbus Foundation data bus or a PROFIBUS data bus.

- 25    10.    Modular gas sensor arrangement, comprising: a transmitter module as claimed in one of the claims 8 to 9 and at least one gas sensor module suitable therefor, as claimed in one of the claims 1 to 7.